Evaluation units for shaft copying systems

Realization of elevator and safety functions with intelligent safety gear management

PSU03

Can be combined with electromechanical safety gear

The PSU03 evaluation unit is used in combination with the Ants LES03 sensor to implement elevator and safety functions in accordance with EN 81-20/-21/-50 and to trigger and monitor the electromechanical safety gear.

CANopen LIFT | SSI | RS485

SIL3 Functional Safety EN 81

Order code PSU03

PSU03	.	X	X	X	.	X	X	1	.	X	1	2	.	XX	1
Type		a	b	c		d	e			f		g		h	

a *Safety device (safety gear, see table)*
Safety chain + elektromechaniscal safety gear
1 = **Wittur** – mechanical reset (via counter-movement) left/right at the same time
2 = **Dynatech** – electronic reset (magnetic field, coil) left/right at the same time
3 = **Cobianchi** – electronic reset (motor) left/right at the same time
4 = **Dynatech** – electronic reset (motor) left/right at the same time
5 = **Dynatech** – electronic reset (magnetic field, coil) left/right one after another –> reduces the maximum current, thereby allowing smaller power supplies to be used if necessary
C = safety chain + anti-sink protection

b *Voltage safety chain*
1 = 24 ... 60 V DC
2 = 100 ... 130 V AC
3 = 220 ... 240 V AC

c *Safety gear direction*
1 = upwards and downwards
2 = downwards

d *Door bridging*
1 = parameter preset to "door bridging via PSU03"
2 = parameter preset to "external door bridging"

e *UCM*
1 = with all actuators (SC, ESA, ESG) can only be combined with safety gear direction **c** = 1
2 = for safety chain only

f *Non-safe inputs/outputs (see terminal assignment on p. 3)*
A = Inputs/outputs without function
1 = Signal indicating that the elevator car is in the door zone (relay)

g *Language menu navigation*
2 = EN – English (can be changed to DE, FR, IT, ES via menu)

h *Interface / Interface profile*
(adjustable termination resistor, default = off)
22 = CANopen Lift
31 = CANopen Lift + RS485 (9 Byte, 24 Bit position data)
41 = CANopen Lift + SSI, Gray (25 Bit)

Stock type
PSU03.111.111.A12.221
PSU03.331.111.A12.221
PSU03.532.111.A12.221

The parameters **a**, **d**, **e** and **g** can be changed to one of the specified options via the display.
(The stock type can be changed to the desired configuration in the field)

Producer	Product	Safety device direction Type of reset (When indenting, always combined with a counter-movement)	a	Safety gear dir. c	Order code PSU03
Wittur	**ESG-xxBS**	mechanically via counter-movement	1	1	PSU03.**1**x**1**.xx1.A12.xx1
	ESG-25U	mechanically via counter-movement	1	2	PSU03.**1**x**2**.xx1.A12.xx1
Dynatech	**eASG xx UD**	electronic (magnetic field, coil), left/right **at the same time**	2	1	PSU03.**2**x**1**.xx1.A12.xx1
		electronic (magnetic field, coil), left/right **one after another**	5	1	PSU03.**5**x**1**.xx1.A12.xx1
	eASG xx	electronic (magnetic field, coil), left/right **at the same time**	2	2	PSU03.**2**x**2**.xx1.A12.xx1
		electronic (magnetic field, coil), left/right **one after another**	5	2	PSU03.**5**x**2**.xx1.A12.xx1
	eASG xx EVO UD	electronic (magnetic field, coil), left/right **at the same time**	2	1	PSU03.**2**x**1**.xx1.A12.xx1
		electronic (magnetic field, coil), left/right **one after another**	5	1	PSU03.**5**x**1**.xx1.A12.xx1
	eASG xx EVO	electronic (magnetic field, coil), left/right **at the same time**	2	2	PSU03.**2**x**2**.xx1.A12.xx1
		electronic (magnetic field, coil), left/right **one after another**	5	2	PSU03.**5**x**2**.xx1.A12.xx1
	eASG xx EVO II UD	electronic (motor), left/right **at the same time**	4	1	PSU03.**4**x**1**.xx1.A12.xx1
Cobianchi	**PC xx GAxEA**	electronic (motor), left/right **at the same time**	3	1	PSU03.**3**x**1**.xx1.A12.xx1
	PC xx GOxEA	electronic (motor), left/right **at the same time**	3	2	PSU03.**3**x**2**.xx1.A12.xx1

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Technical data – evaluation unit

Electrical characteristics

Connection type		Push-in spring connection
Supply voltage +V		24 V DC ±10 %
Power		< 8.5 W the power ratings of the external components must be taken into account when selecting the power supply unit
Digital output (CLK)	V_{CLK}	+V – 1.0 V, max. 200 mA wiring may only be carried out in acc.with the operating instructions
Digital output (BUZ)	V_{BUZ}	+V – 1.0 V, max. 50 mA
ESG holding coil (SGH)	V_{SGH} I max, min. I max, typ.	+V – 1.0 V 1,4 A (up to +50°C), 1,0 A (up to +65°C) 2,0 A (up to +50°C), 1,5 A (up to +65°C)
ESG reset (SGR)	V_{SGR}	+V – 1.0 V, max. 6 A
Integration of safety chain (SC) potential-free contact		220 V ... 240 V AC, max. 2 A 100 V ... 130 V AC, max. 2 A 24 V DC, max. 1 A 48 V DC, max. 0,5 A 60 V DC, max. 0,48 A
Integration of safety chain / additional brake (ESA) potential-free contact		220 V ... 240 V AC, max. 2 A 100 V ... 130 V AC, max. 2 A 24 V DC, max. 1 A 48 V DC, max. 0,5 A 60 V DC, max. 0,48 A
Integration of door contacts (Door) potential-free contact		220 V ... 240 V AC, max. 2 A 100 V ... 130 V AC, max. 2 A 24 V DC, max. 1 A 48 V DC, max. 0,5 A 60 V DC, max. 0,48 A
Digital output (DO1)	V_{DO1}	+V – 1.0 V, max. 50 mA
Relay output (REL1, REL2) potential-free contact		24 V AC, max. 0.1 A 24 V DC, max. 0.1 A
Digital input (DI1, DI2, DI3, DI4))		max. 30 V DC low < 2.0 V DC high > 12 V DC

Safety characteristics

Shutdown time / system response time	< 30 ms (incl. relay switching times)

Mechanical characteristics

Mounting	DIN rail mounting
Housing (material)	plastic (PC/ ABS)
Weight	390 g (without connector)
Protection acc. to EN 60529	IP20
Vibration resistance acc. to EN 60068-2-6	10... 55 Hz, ±0.35 mm, 20 m/s²
Shock resistance acc. to EN 60068-2-27	300 m/s², 11 ms (3 shocks per direction)
Continuous shock resistance acc. to EN 60068-2-27	100 m/s², 16 ms (1000 shocks per direction)
Dimensions L x W x H	178 x 95 x 45 mm [7.00 x 3.74 x 1.77"] with connector +16 mm [0.63"]

Environmental conditions

Humidity	< 95 % (non-condensing)
Operating temperature	-20 °C ... +65 °C [-4 °F ... +149 °F]
Storage temperature	-40 °C ... +85 °C [-40 °F ... +185 °F]
Air pressure (operating altitude)	800 ... 1013 hPa (up to 2000 m [6562 ft] above NN)

Approvals

EU type-examination certificate	TÜV-A-AT-1-25-0752-EUES
Classification	SIL3
System structure	2 channel
PFH_d value	< 10^{-7} h^{-1}
Mission time / Proof test interval	20 years
Relevant standards	EN 81-20; EN 81-50; EN 81-21; EN 62061; EN 61508-1-7; EN 60664-1; EN 61784-3
CE compliant in accordance with	
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU
Elevator Directive	2014/33/EU

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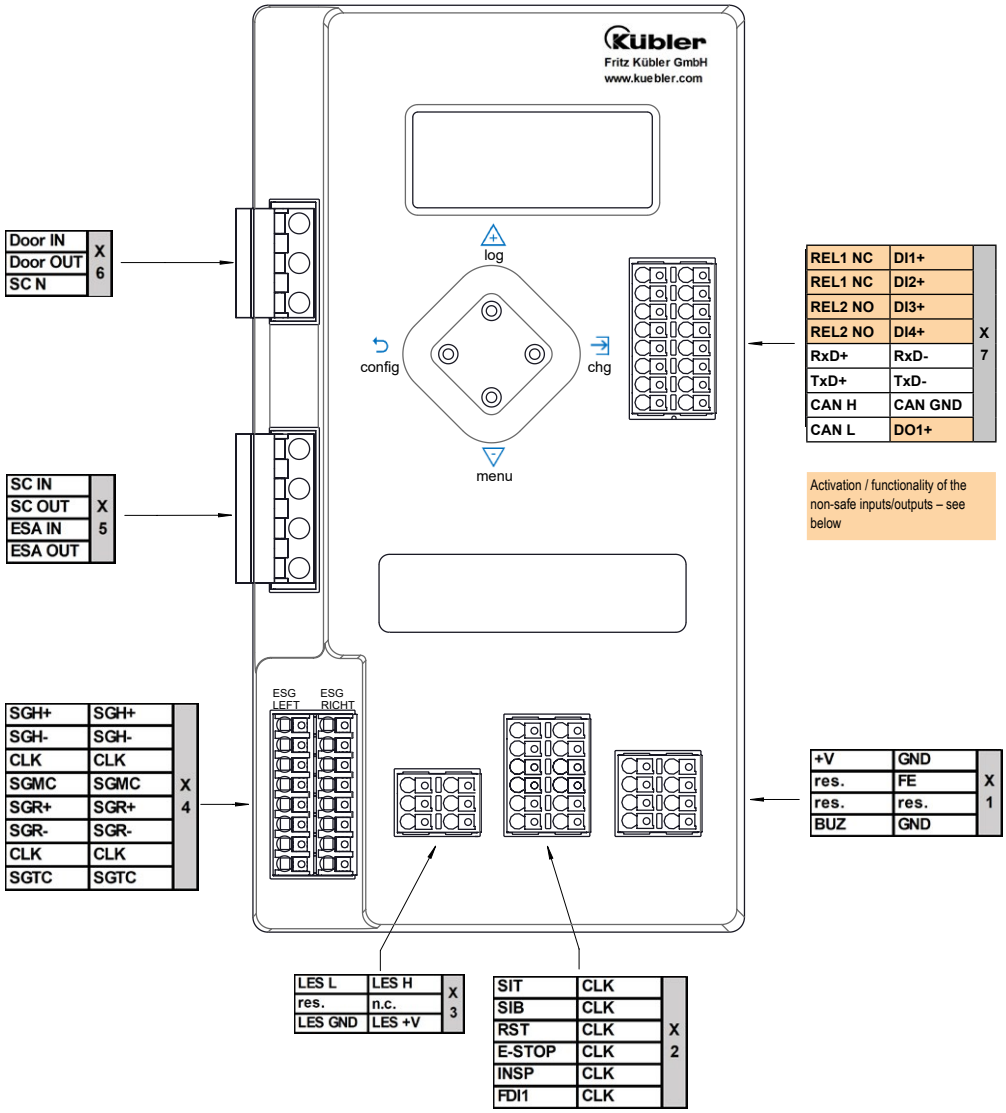
Terminal assignment



Function of the non-safe inputs/outputs for connector X7 – Order option ⓘ

Order option ⓘ = A

Pin	Function
REL1 NC	no function
REL2 NO	no function
DI1+	no function
DI2+	no function
DI3+	no function
DI4+	no function
DO1+	no function

Order option ⓘ = 1

Pin	Function
REL1 NC	no function
REL2 NO	Signal indicating that the elevator car is in the door zone
DI1+	no function
DI2+	no function
DI3+	no function
DI4+	no function
DO1+	no function

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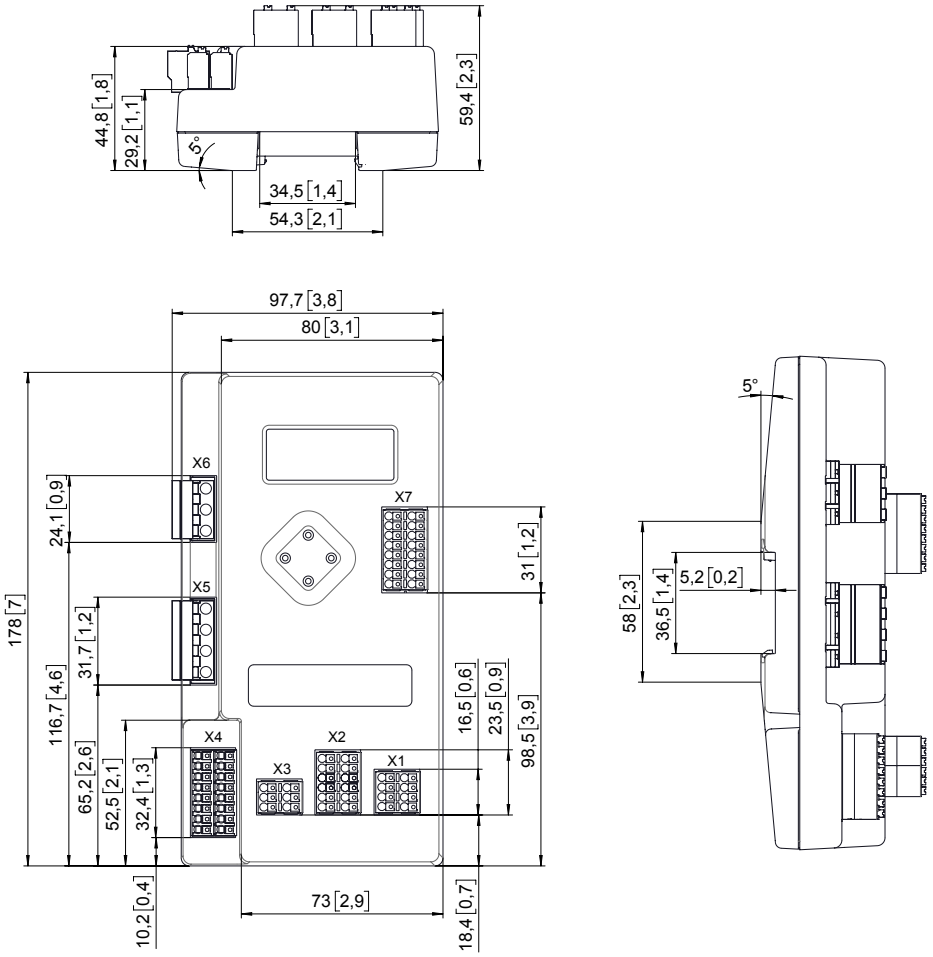
Dimensions PSU03

Dimensions in mm [inch]